MARANTZ 30

MODEL

SERVICE MANUAL

FEATURES

Semi-automatic, Belt drive with cueing, inside force canceller, speed selector, reject.

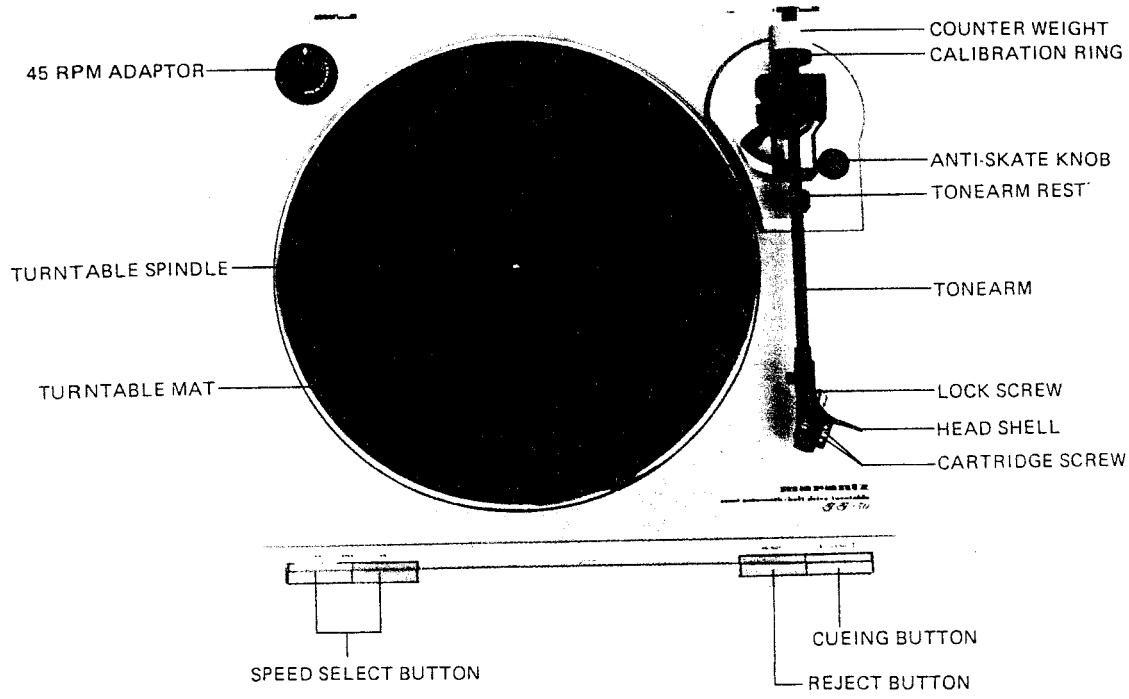
SPECIFICATIONS

Type	2 speeds, Belt drive semi-automatic turntable
Platter	Aluminum alloy die-cast, 300 mm diameter
Motor	Four pole synchronous motor
Speed	2 speeds; 33-1/3 and 45 rpm
S/N (DIN B)	60 dB or more, Test record: DIN45544, Test equipment: by DIN 45500
Wow & Flutter (DIN B)	0.2% or less, Test record: DIN45545, Test equipment: by DIN45500
Tonearm	
Effective length	214±2 mm
Cartridge	
Frequency response	20 – 20,000 Hz
Output voltage	1.8 – 3.2 mV at 1 kHz, 3.54 cm/sec, Test record: TRS-1004
Channel difference	2 dB or less at 1 kHz, Test record: TRS-1004
Channel separation	18 dB or more at 1 kHz, Test record: TRS-1004
Tracking force	2 gram + 0.5, −.3 gram
Stylus tip	0.6 mil diamond stylus
Power source	110/220V 50/60Hz, 220V 50Hz for Europe, 240V 50Hz for UK and Australia
Power consumption	8W or less
Dimensions	416(W) x 373(D) x 110(H) mm
Weight	3.5 kg
Accessories	45 rpm adaptor

NOTE: Nominal Specs represent the design specs; all units should be able to approximate these-some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.

Lubrication of the mechanism is not required. However, whenever a unit is brought in for adjustment or repair, always use good common sense ... clean any dust or dirt from mechanical parts and if moving parts do seem to bind, check for dirt. If necessary, add a very fine film of light-weight specially formulated lubricant.

DESIGNATION OF PARTS



ALIGNMENT-ADJUSTMENTS

This service manual was prepared for qualified technicians familiar with Turntable maintenance and alignment procedure. Review complete adjustment sections before proceeding.

Cartridge Wire Color Code

Before installing a cartridge to the headshell, the wires should be connected to the cartridge. The cartridge or its technical sheet will identify the connection pins. It may be necessary to slightly compress the terminal clips on the headshell wires with your fingers to firm the contact area to the pins. Below is the headshell color-description.

Headshell Wires:

Right Channel Hot	Red
Right Channel Ground	Green
Left Channel Hot	White
Left Channel Ground	Blue

After wire connections are made, install cartridge mounting screws, provided with the cartridge, through the mounting slots and tighten firmly enough to hold the cartridge in place. Final adjustments are made after the overhang dimension is adjusted.

A Stylus overhang adjustment

A 45 RPM adaptor is supplied with the TT130 turntable that will be used for adjusting the overhang dimension. An arrow is marked on the 45 RPM ADAPTOR, and a gradient scale from 11 through 18.

1. Place the adaptor on the spindle with the arrow pointing towards the rear of the turntable. Gradient scale will be in the lower half quadrant when viewed from the front.
2. Remove stylus protective cover and balance the tone arm. Place the tone arm to the gradient scale and set stylus contact to gradient 15 mm on the 45 RPM ADAPTOR. Set the cartridge screws after checking that the cartridge is parallel to the sides of the headshell.

B. Stylus tracking force adjustment

1. Remove stylus protective cover. Adjust the counterweight until tone arm is capable of being suspended in midair without movement.
2. Set the counterweight dial to zero.
3. Rotate the counterweight towards the pivot point to the manufacturers specified cartridge tracking force.
4. Adjust the anti-skate control to the same force as the stylus tracking force.

C. **Pitch-verification**

1. Verify that the platter pitch control can be adjusted nominally from ±3.5% in both 45 and 33.3 RPM Modes.
2. Monitor that pitch control stabilizes Dot Patterns on the Platter. If adjustment is necessary, proceed to trouble shooting chart pitch adjustments.

D. **Auto-return adjustment**

If the Tone Arm returns before the end of the record program or delays to lift at end of record program, the sending arm can be adjusted as follows.
REFER TO FIGURE (1)

1. To slightly delay tone arm return, adjust the fine adjustment screw clockwise.
2. To slightly advance tone arm return, adjust the fine adjustment screw counterclockwise.
3. When larger deviations are necessary, return fine adjustment screw to the middle of its travel.
4. Loosen the feed arm securing screws and adjust the tolerance between the actuating arm and feed-arm assy to 7 mm (.276 in.).
   FIGURE (1)
5. Fine adjust tone arm return by repeating steps one or two, where applicable.

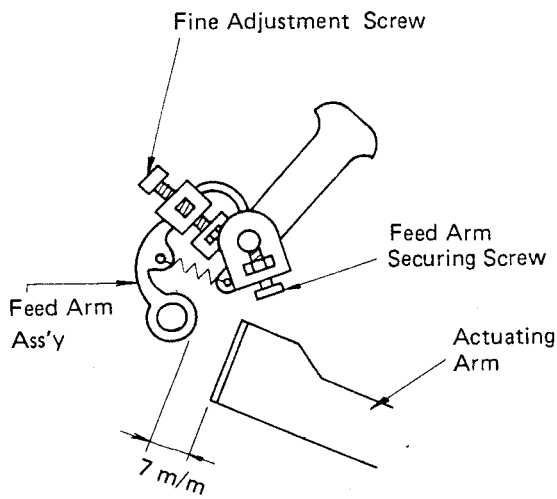


Fig. 1

E. **ASO Count Adjustment**

The test record ES-1008 of NEC made is used.
(Side A: 3mm Pitch, Side B: 1mm Pitch)

1. Use the 3mm Pitch side of record and count 3 times by moving the starting position by 120 degrees at a time.
2. Please adjust so that the average of count of above 3 times can be in 11 — 18 counts.

(Note)
When the 1mm Pitch side of record is used, Please confirm that it does not return.

F. **Adjustment between Turntable spindle Gear and R Gear.**

Pay due attention to the following items to install R Gear.

1) Install the R Gear so that the distance between the center of the R Gear and the center of the turntable bearing is 47 mm.
2) Adjust the turntable bearing so that the turntable spindle gear is positioned in the center of the notch of the R Gear.

Motor Replacement

1) Turn the record player and remove the bottom cover.
2) Remove lead wires of the motor.
3) Loosen the motor securing screws.
4) Reverse the order of the procedures for installtion of the motor.

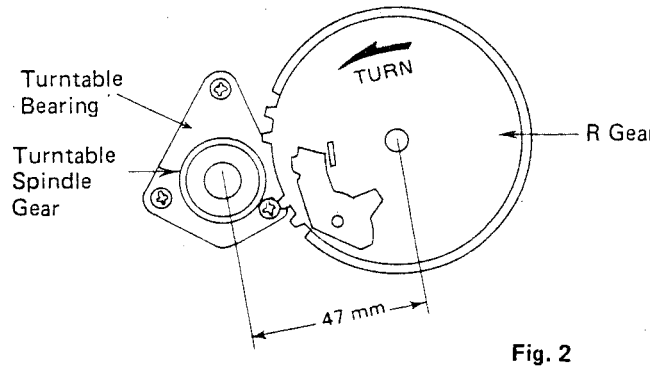
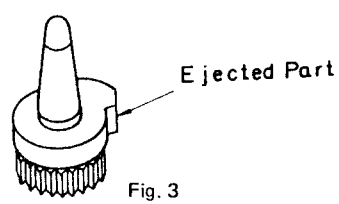
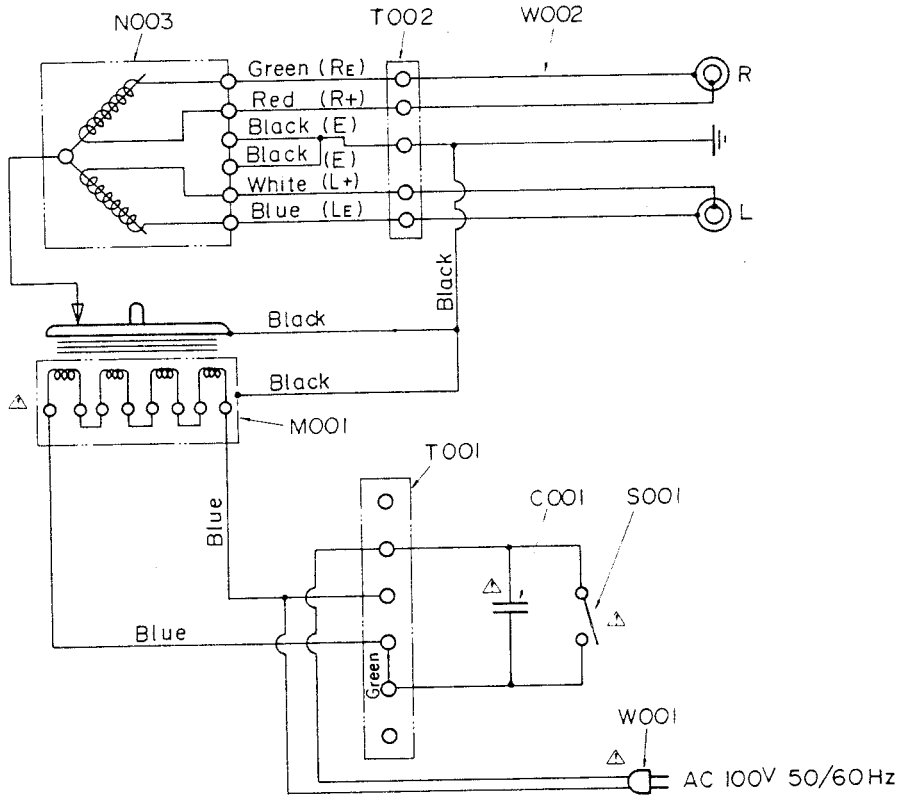


Fig. 2

TROUBLE SHOOTING

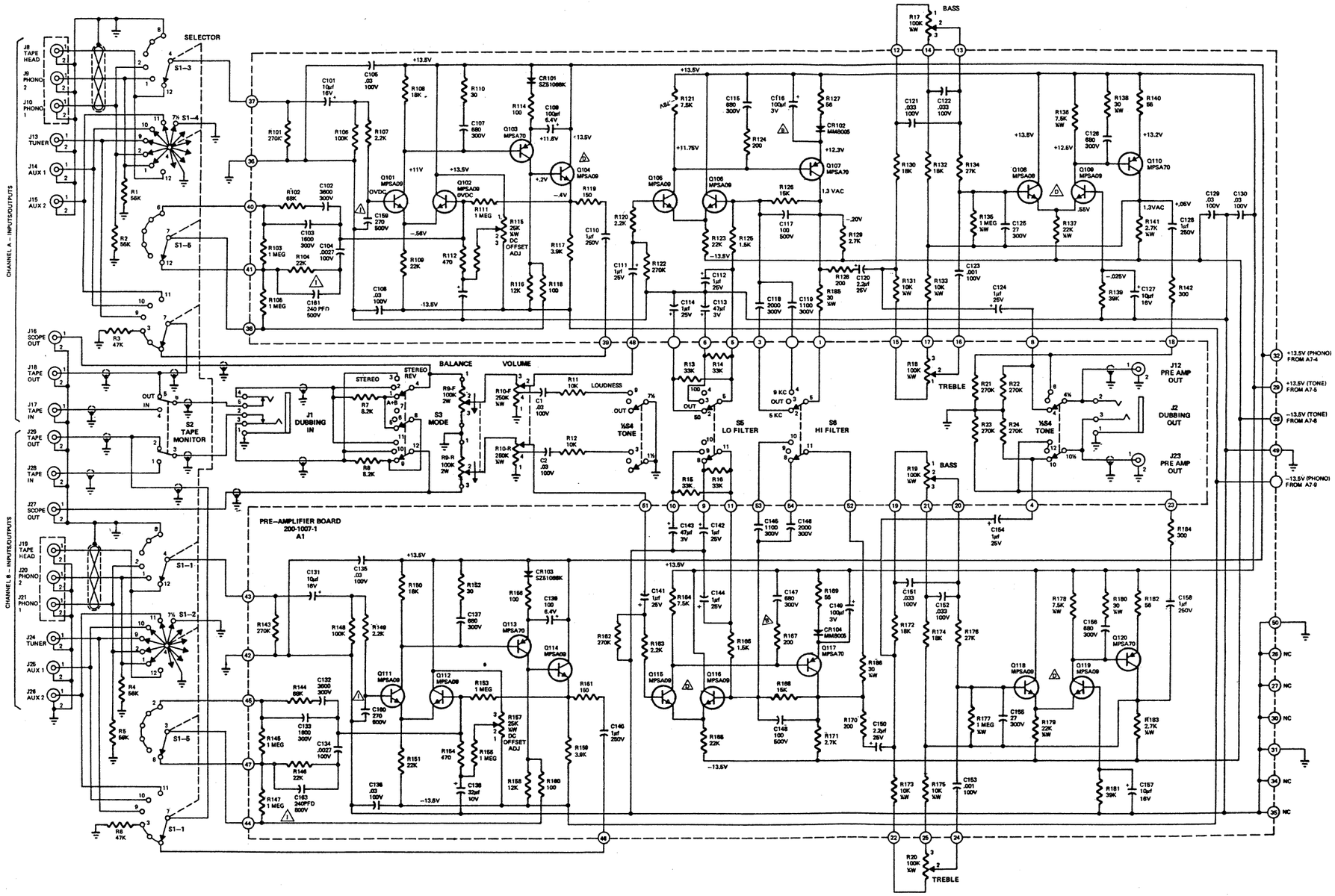
Symptom	Cause	Repair
When the tonearm is placed on a record face, the turntable does not rotate.	1. No current flows because of poor contact of the micro switch. 2. Lead wire disconnection.	1. Replace the old micro switch with a new one. 2. Check wiring continuity.
When the tonearm returns on the arm rest, the turntable does not stop it's rotation.	1. Too wide gap between the micro-switch and the feed arm. 2. Uncorrect wiring of the micro-switch.	1. Adjust the gap to 0.3-0.6 mm. 2. Modify the wiring according to the wiring diagram.
When the reject button is depressed, the tonearm does not return.	1. No operation of the clutch plate and clutch guide. 2. Improper mesh between the main gear and the turntable spindle gear.	1. Check the interlocking transmission mechanism of the reject button, and reject spring. 2. a. Check the gear gap. Refer to Fig. 2. b. Check if the turntable spindle gear is positioned in the center of the notch of the main gear.
When the tonearm returns during playing a record.	1. Inclined record player with its left side down. 2. Deviated feed arm (The feed arm deviated toward the center of the turntable)	1. Place the record player horizontally. 2. Adjust the position of the feed arm properly.
When the stylus stays in the same groove.	1. Improper stylus force (Too light stylus force) 2. Caught tonearm lead wires. 3. Foreign matter between the clutch plate and the clutch guide.	1. Adjust stylus force. 2. Arrange the lead wires properly. 3. Remove the foreign matter.
When record playing is over, the tonearm does not return.	Deviated position of the feed arm (The feed arm deviates toward the direction opposite from the center of the turntable spindle)	Adjust the position of the feed arm.
When large impact sound is heard on the return of the tonearm.	1. Improper mesh between the turntable gear and the main gear. 2. Improper fly-out of the clutch plate or deformed engagement part of the clutch plate.	1. a. Check a gap between the turntable spindle gear and the main gear. Refer to Fig. 2. 2. a. Check if the clutch plate flies out until it strikes the side face of the turntable spindle gear. If not so, check and remove foreign matter between the clutch plate and the clutch guide or between the actuating arm and the mechanism base. b. Check the shape of the ejected part of the turntable spindle gear, (Figure 3).  Fig. 3
When the tonearm returns, the stylus scratches a record face.	1. Excessively pitched up records. 2. Improperly adjusted stylus height.	1. Remove all record. Note: Place only one record on the turntable. 2. Adjust the stylus height.
When electrical output does not come out from the record player.	1. Improperly soldered tonearm lead wires to the 5P terminal strip. 2. Defective transmission path. 3. Defective cartridge.	1. Check the soldered parts concerned. 2. Check the continuity of the transmission path. 3. Replace the old cartridge with a new one.

WIRING DIAGRAM F VERSION



SERVICE INFORMATION

1. ⚠ indicates safety critical components. For continued safety, replace safety critical components only with manufacturer's recommended parts.
2. After servicing this appliance and before returning to the customer, confirm the insulation resistance between each blade (or pin) of power cord plug and the spindle of turntable platter is more than 10 Megohms.

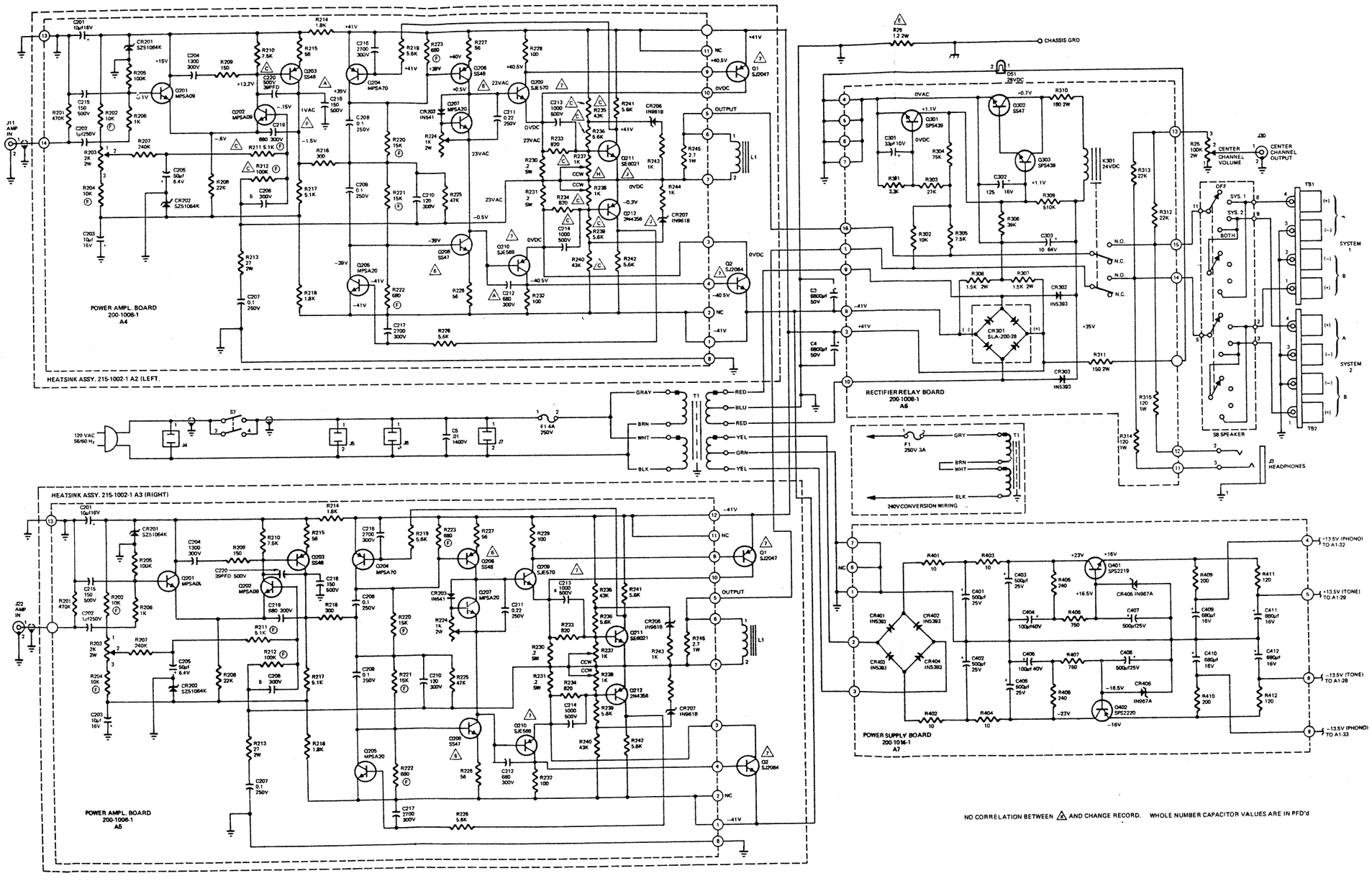


NOTES: (UNLESS OTHERWISE SPECIFIED.)

1. ALL RESISTORS ARE ½ W; VALUES ARE IN OH
2. CAPACITOR VALUES EXPRESSED DECIMALLY MICRO-FARADS; OTHERS ARE IN PICO-FARADS
3. (F) DENOTES PRECISION FILM RESISTORS.
4. LAST REFERENCE DESIGNATION USED: CHASSIS: A7, C5, DS1, F1, J30, P1, R26, S8, A1: C163, CR104, Q120, R186. A2-A3: L1, Q2. C220, CR207, Q212, R245. A6: C303, CR303, Q30 K301. A7: C412, CR206, Q402, R412.
5. REFERENCE DESIGNATION NOT USED: CR204, CR205, CR212, CR218, CR162, R243, R24
6. Q206 & Q208 ARE MATCHED WITHIN ONE RANGE.
7. Q1 & Q2, Q209 & Q210 ARE MATCHED PAIRS SAME BETA RANGE.
8. BETA RANGES ARE: 40-99, 100-149, 150-199, 20 400 OR GREATER.

REF. DES.	BETA (H_{FE})	REF. DES.	BET
Q101	>400	Q202	
Q102	>400	Q203	
Q103	>150	Q204	
Q104	>100	Q205	
Q105	>200		
Q106	>200	Q206	
Q107	>150		
Q108	>200	Q207	
Q109	>200		
Q110	>100	Q208	
Q111	>400		
Q112	>400	Q209	
Q113	>150		
Q114	>100	Q210	
Q115	>200		
Q116	>200	Q1	
Q117	>150		
Q118	>200	Q2	
Q119	>200		
Q120	>100	Q302	
Q201	>400		

Figure 18. Model 30 Schematic.



NO CORRELATION BETWEEN △ AND CHANGE RECORD. WHOLE NUMBER CAPACITOR VALUES ARE IN PFD'd

△A 1001 TO 1200 ONLY

△B 1131 AND ON WAS 30Ω IS 200Ω

△C 1351 AND ON
R235 WAS 39K IS 43K
R236 WAS 75K IS 5.6K
R233 WAS 1K IS 820Ω
R234 WAS 1K IS 820Ω
R240 WAS 39K IS 43K
R239 WAS 7.5K IS 5.6K
C213, C214 WAS 680PF IS 1000PF 300V IS 500V
R211 WAS 3.9K 5% IS 5.K,2%
R212 WAS 100K 5% IS 100K 2%

△D 1285 AND ON. 1001→1284 TO BE REWORKED AS REQUIRED TO MEET NOISE SPEC's. Q104, Q114 WAS MPSA 10 BETA > 40 IS MPSA 09 BETA > 100

Q105, Q106, Q115, Q116, WAS MPSA 10 BETA > 130
Q108, Q109, Q118, Q119 IS MPSA 09 BETA > 200

△E 1196 AND ON R26 1.2 OR 2.0 Ω 2W

△F C219 1001 AND ON OPTIONAL ITEM TO ELIM. OSCILLATION

△G C220 3291 AND ON

△H R237, R238 WAS 470Ω IS 1K POT

△I 1053 AND ON C159 WAS 150 PF IS 270 PF
C160 WAS 150 PF IS 270 PF
ADDED C161, C163

△J EMITTER RESISTORS R243, R244 (1K, 1/2W, 5%)
1001→1351 ONLY

Figure 18. Model 30 Schematic.